The ASEAN+3 Bond Market Forum (ABMF) was established in May 2010 by the finance ministers of the Association of Southeast Asian Nations (ASEAN) plus the People’s Republic of China, Japan, and the Republic of Korea—collectively known as ASEAN+3—under the Asian Bond Markets Initiative (ABMI). The Forum is the only regional platform of which actions and recommendations are reported to the ASEAN+3 policy discussion. It functions to integrate the ASEAN+3 markets through standardization and harmonization of regulations and market practices as well as market infrastructures relating to cross-border bond transactions.

Since its establishment, the ABMF has produced various outputs and created impacts. In 2012, the ABMF released the ASEAN+3 Bond Market Guide, the first officially recognized publication of bond market regulations and settlement procedures in ASEAN+3 economies. The market guide helped narrow information gaps and increase market transparency, which was often regarded as the biggest barrier to market entry. In 2014, to provide policy recommendations to standardize securities transaction flows in the region, ABMF published the Sub-Forum 1 (SF1) Phase 2 Report: Proposal on ASEAN+3 Multi-Currency Bond Issuance Framework (AMBIF) as a regionally standardized bond issuance framework, and the Sub-Forum 2 (SF2) Phase 2 Report: ASEAN+3 Information on Transaction Flows and Settlement Infrastructures. After the endorsement of both reports by the ASEAN+3 finance ministers in 2015, ABMF released two Phase 3 reports: Implementation of the AMBIF: ABMF SF1 Phase 3 Report, and Harmonization and Standardization of Bond Market Infrastructures in ASEAN+3: ABMF SF2 Phase 3 Report. The SF1 Phase 3 report contained the Single Submission Form (SSF) to be utilized in the markets participating in AMBIF and explained the procedures for issuing an AMBIF bond. The SF2 Phase 3 report (i) identified and agreed upon key transactional financial messages to be harmonized and standardized to facilitate cross-border bond transactions, and (ii) successfully demonstrated the readiness of the region to implement key international standards such as ISO 20022 by 2025. As a result, implementation of ISO 20022 was included as one of the strategic measures for financial integration in the ASEAN Economic Community Blueprint 2025.

ABMF meetings are held three times a year, bringing together more than 100 experts from the ministries of finance, central banks, securities market regulators, central securities depositories, securities exchanges and market operators, financial market associations as well as major financial institutions and IT vendors in the region. The forum is open to experts who are interested in bond market developments and regional financial cooperation.

The 31st ABMF will be organized jointly by the APEC Business Advisory Council/Asia Pacific Financial Forum, XBRL International, and kindly hosted by Daito Bunka University. Tentatively, the Forum plans to discuss:

- the recent bond market developments in the region;
- good practices to develop a local currency bond market;
- regulatory issues such as the benchmark reform and its impact on Asia;
- technology to improve regulation and regulatory reporting;
- the account structure study to contribute to standardization of know-your-customer (KYC) procedures;
- other issues relevant to bond market development.
## Sub-Forum 1 Meeting

**TIME** | **PROGRAM**
--- | ---
09:00 – 09:30 | Registration
09:30 – 09:40 | **Welcome Remarks** by Mr. Hirofumi Kadowaki, President, Daito Bunka University
09:40 – 09:50 | **Opening Remarks** by Mr. Toshio Oya, Deputy Director-General, International Bureau, Ministry of Finance of Japan
09:50 – 09:55 | **Photo Session**
09:55 – 10:00 | **Opening** by Mr. Koji Ito, SF1 Chair
10:00 – 10:45 | **Session 1: ABMI and Progress of Bond Market Development in Asia**
- Good Practices for Developing a Local Currency Bond Market by ADB secretariat
- PRC Exchange Bond Market (30 min) by SSE and SZSE
- Mongolia (15 min) by MMOF
10:45 – 11:00 | **Coffee Break**
11:00 – 11:15 | **Session 2: Update of Credit Guarantee and Investment Facility (CGIF)** by Mr. Kiyoshi Nishimura, CGIF
11:15 – 12:00 | **Session 3: Update on Bond Market Development Support by Technical Assistance and Coordination Team (TACT)** by TACT consultants (Daiwa Institute of Research and Nomura Research Institute)
- Viet Nam (NRI)
- Myanmar (DIR)
- Philippines (DIR)
12:00 – 12:30 | **Session 4: Recent Developments in Asian bond markets** by ABO team
12:30 – 12:40 | **Session 5: Bond market-related macroeconomic updates** by Mr. Yasuto Watanabe, Deputy-Director, ASEAN+3 Macroeconomic Research Office (AMRO)
12:40 – 14:00 | **Lunch**
14:00 – 15:00 | **Session 6: Benchmark Reform and its Impact on Asia**
- What is the Benchmark reform? – regulator’s perspective by Ms. Simonetta Iannotti, FSB (20 min)
- What is the Benchmark reform? – market’s view by Ms. Tomoko Morita, ISDA (20 min)
- Possible impact on emerging Asia by Mr. Edmund Lee and Nick Burrough, Bloomberg (20 min)
15:00 – 15:15 | **Coffee Break**
<table>
<thead>
<tr>
<th>TIME</th>
<th>PROGRAM</th>
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<tbody>
<tr>
<td>15:15 – 16:20</td>
<td><strong>Session 7: Panel discussion - Benchmark Reform and its Impact on Asia</strong></td>
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<td></td>
<td>- Preparation and discussion in developed markets</td>
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<td></td>
<td>- Possible impacts on emerging Asia and potential risks and disruptions</td>
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<td></td>
<td>- what do we need to consider and prepare?</td>
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<td><strong>Panelists</strong></td>
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<tr>
<td></td>
<td>- Ms. Simonetta Iannotti, FSB</td>
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<td>- Ms. Tomoko Morita, ISDA</td>
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<td></td>
<td>- Mr. Taro Matsuura, MUFG</td>
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<td></td>
<td>- Mr. Matthew Chan, Executive Director, Head of Policy &amp; Regulatory Affairs</td>
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<td>- ASIFMA</td>
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<td>- Ms. Vicky Cheng, Bloomberg</td>
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<td><strong>Moderator</strong></td>
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<td></td>
<td>- Mr. Satoru Yamadera, Principal Financial Sector Specialist, ADB</td>
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<tr>
<td>16:20 – 16:30</td>
<td><strong>Closing Remarks by ADB and SF1 Chair</strong></td>
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<td>TIME</td>
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<tr>
<td>09:00 – 09:30</td>
<td><strong>Registration</strong></td>
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<tr>
<td>09:30 – 09:35</td>
<td><strong>Opening Remarks by Mr. Seung-Kwon Lee, SF2 Chair</strong></td>
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<tr>
<td>09:35 - 10:15</td>
<td><strong>Session 8: Regional Financial Stability and Cross-Border Collateral</strong></td>
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<td></td>
<td>- Overview of regional safety-net by Mr. Namsung Kim, AMRO (20 min)</td>
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<td></td>
<td>- Regulatory risk mitigation and necessary consideration for more sound</td>
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<td></td>
<td>regional financial systems by Satoru Yamadera, ADB (20 min)</td>
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<tr>
<td>10:15 - 11:10</td>
<td><strong>Session 9: Technology to Improve Regulatory Reporting – RegTech</strong></td>
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<td></td>
<td>- Technological trend and evolution by Satoru Yamadera, ADB (10 min)</td>
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<td></td>
<td>- Use of Artificial Intelligence, Optical Character Recognition (OCR),</td>
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<tr>
<td></td>
<td>and Robotics Process Automation (RPA) by Mr. Takuya Nakagawa, Manager,</td>
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<td>RPA Solution Group, NTT Data (45 min)</td>
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<tr>
<td>11:10 – 11:30</td>
<td><strong>Coffee Break</strong></td>
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<tr>
<td>11:30 – 12:30</td>
<td><strong>Session 10: Account Structure Study and Standardization of KYC</strong></td>
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<tr>
<td></td>
<td>- Recommendation to ASEAN+3 (30 min)</td>
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<td></td>
<td>- Comments from international experts (30 min)</td>
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<td></td>
<td>Mr. Masayuki Tagai, Network Management; Mr. Boon Hiong Chan, Deutsche</td>
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<td>Bank; Mr. Stephen Bruce, Ernst &amp; Young</td>
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<td>12:30 – 14:00</td>
<td><strong>Lunch, (name of function room)</strong></td>
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<tr>
<td>14:00 – 15:00</td>
<td><strong>Session 11: FinTech and RegTech</strong></td>
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<tr>
<td></td>
<td>Each speaker presents potential use case of technology for finance,</td>
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<td></td>
<td>regulation, and supervision</td>
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<tr>
<td></td>
<td>- RegTech case in Europe by John Turner, XBRL International (30 min)</td>
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<tr>
<td></td>
<td>- Legal Entity Identifier (LEI) for FinTech and RegTech (30 min)</td>
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<tr>
<td></td>
<td>by Mr. Hiroshi Nakatake, Managing Director, Transaction Banking</td>
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<td>Division, MUFG Bank &amp; Mr. Masayuki Tagai, Managing Director, Network</td>
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<td></td>
<td>Management</td>
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<tr>
<td>15:00 – 15:20</td>
<td><strong>Coffee Break</strong></td>
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<tr>
<td>15:20 – 16:25</td>
<td>**Session 12: Panel Discussion: How can technology improve the region’s</td>
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<td>regulatory environment and support market integration?</td>
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<td></td>
<td>- Use of technology to improve finance</td>
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<td></td>
<td>- Recommendation for KYC process and use of LEI</td>
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<td>- Implication for regional market integration</td>
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<td>TIME</td>
<td>PROGRAM</td>
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<td>ABMF Sub Forum 2 (SF2) Meeting</td>
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<tr>
<td>Panelist</td>
<td>- Ms. Kaori Horaguchi, ISDA (Tokyo)</td>
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<td>- Mr. Julius Caesar Parrenas, APEC Business Advisory Council</td>
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<tr>
<td></td>
<td>- Mr. Boon-Hiong Chan, Director, Global Head of Market Advocacy, Deutsche Bank</td>
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<td>- Ms. Meiko Morioka, Manager, SWIFT</td>
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<td></td>
<td>- Mr. Peter Mcmillan, Bloomberg</td>
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<td></td>
<td>- Mr. Yoshiaki Wada, Chair XBRL Asia Round Table</td>
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<tr>
<td>Moderator</td>
<td>- Satoru Yamadera, ADB</td>
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<tr>
<td>16:25 – 16:30</td>
<td><strong>Wrap-up by ADB and SF2 Chair</strong></td>
</tr>
</tbody>
</table>
## ABMF – XBRL Joint Asian Roundtable (PART 1)

### ASEAN+3 Bond Market Forum (ABMF) – eXtensible Business Reporting Language (XBRL) Joint Asian Roundtable

“Creating the Future: SupTech and RegTech powered by Standards and Structured data”

<table>
<thead>
<tr>
<th>TIME</th>
<th>PROGRAM</th>
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<tbody>
<tr>
<td>09:00 – 09:15</td>
<td>Registration</td>
</tr>
<tr>
<td>09:15 – 09:25</td>
<td>Welcome Remarks by Mr. Kyosuke Wagai, Chairman of XBRL Japan, Co-host</td>
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<tr>
<td>09:25 – 09:35</td>
<td>Remarks by Dean of Faculty of Business Administration, Daito Bunka University</td>
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<tr>
<td>09:35 – 10:05</td>
<td>Report from XII by Mr. John Turner, CEO XBRL International</td>
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</table>

**Recent Trends in Automated Regulatory Reporting and Supervisory Information Collection**

<table>
<thead>
<tr>
<th>TIME</th>
<th>PROGRAM</th>
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<tbody>
<tr>
<td>10:05 – 10:45</td>
<td><strong>Key note Session 1: Digital innovation and Regulation – US cases</strong>&lt;br&gt;FDIC XBRL and Fintech Update (Mr. Mark Montoya, Webex 20 min)&lt;br&gt;SEC (Mr. Mike Willis, Mr. Jonathan Ingram, Webex 20 min)</td>
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<tr>
<td>10:45 – 11:00</td>
<td>Coffee break</td>
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<tr>
<td>11:00-11:30</td>
<td><strong>Key note session 2: SupTech case in Japan by Mr. Daisuke Nakai, JFSA</strong></td>
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<td>11:30-12:00</td>
<td><strong>Key note Session 3: Regulatory Modernization – India’s case</strong> by Mr. Prithwis Jana, Reserve Bank of India</td>
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<tr>
<td>12:00 – 12:40</td>
<td><strong>Wrap-up Panel 1: The Future of Regulation</strong>&lt;br&gt;- With technologies, what becomes possible?&lt;br&gt;Panelist&lt;br&gt;  - Mr. Daisuke Nakai, JFSA&lt;br&gt;  - Mr. Prithwis Jana, RBI&lt;br&gt;  - Mr. Michal Piechocki, BR-AG&lt;br&gt;  - Mr. Satoru Yamadera, ADB&lt;br&gt;Moderator&lt;br&gt;  - Mr. Yoshiaki Wada, Chair XBRL Asia Round Table</td>
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<tr>
<td>12:40 – 13:40</td>
<td>Lunch</td>
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<tr>
<td>13:40 – 14:10</td>
<td><strong>Key note Session 4: XBRL and ESG reporting by Mr. Toshikazu Otsuka, NTT Data Institute of Management Consulting</strong></td>
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<tr>
<td>14:10 – 14:40</td>
<td><strong>Key note Session 5: XBRL and Artificial Intelligence by Mr. Shogo Oyama, XBRL</strong></td>
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<td></td>
<td><strong>Japan</strong></td>
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<tr>
<td>14:40 – 15:00</td>
<td>Coffee break</td>
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</table>
| 15:00 – 16:20| **Wrap-up Panel 2: Text mining, Artificial Intelligence, and technology to overcome difference in languages**  
|              | - Technology trend                                                     |
|              | - How we can integrate the markets with technologies                   |
|              | **Presentation:**                                                      |
|              | - The PRA’s approach to Regtech, Mr. Nick Vaughan, BOE, (Webex 15 min)  |
|              | - XBRL and the new approach to data collection in the Bank of Russia, Ms. Olga Goncharova, Central Bank of the Russian Federation (20 min) |
|              | - Data and AI: how we can design trusted future, Mr. Masatomo Goto, Fujitsu (20 min) |
|              | **Panelist**                                                           |
|              | - Mr. Masatomo Goto, Fujitsu                                           |
|              | - Ms. Olga Goncharova, Central Bank of Russian Federation              |
|              | - Mr. Satoru Yamadera, ADB                                             |
|              | - Mr. John Turner, CEO XBRL International                             |
|              | **Moderator**                                                          |
|              | - Mr. Yoshiaki Wada, Chair XBRL Asia Round Table                       |
| 16:20 – 16:30| Wrap up                                                                |
| 18:30 –       | **Welcome reception hosted by XBRL Japan**                            |
## ASEAN+3 Bond Market Forum (ABMF) – eXtensible Business Reporting Language (XBRL) Joint Asian Roundtable

### “Creating the Future: SupTech and RegTech powered by Standards and Structured data”

<table>
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<tr>
<th>TIME</th>
<th>PROGRAM</th>
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<tbody>
<tr>
<td>09:00 – 09:15</td>
<td>Registration</td>
</tr>
<tr>
<td>09:30 – 10:30</td>
<td><strong>Update from members</strong></td>
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<td></td>
<td>Mr. Tom Leahy, Vizor, Implementing Structured Data Collections (20minutes)</td>
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<td></td>
<td>Ms. Connie Chen, PwC China (20 minutes)</td>
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<td></td>
<td>Mr. Alexander Panjaitan / Ms. Diandini Susalit, IDX (20 minutes)</td>
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<tr>
<td>10:30 – 10:50</td>
<td>Coffee break</td>
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<tr>
<td>10:50 – 11:30</td>
<td><strong>Update from members</strong></td>
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<td>Albert Chou, Taiwan Stock Exchange (20 minutes)</td>
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<td>Yongjune Chung, XBRL Korea (20 minutes)</td>
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<tr>
<td>11:30 – 12:00</td>
<td><strong>Wrap-up panel</strong></td>
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<tr>
<td>12:00 – 12:30</td>
<td>Technical update from XII, by Mr. John Turner, CEO XBRL International</td>
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<tr>
<td>12:30 – 13:30</td>
<td>Lunch</td>
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<tr>
<td>13:30 – 14:00</td>
<td><strong>Vendor session</strong></td>
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<td></td>
<td>Ms. Avey Starr, Managing Director, Seating Inc.</td>
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<td>Mr. K Balachandran, IRIS</td>
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<td>Mr. Raymond Connolly, Vizor</td>
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<td>Mr. Tadashi Okai, Fujitsu</td>
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<td>Mr. Yuichiro Nakayama, NTT Data System Technologies</td>
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<td></td>
<td>Mr. Michal Piechocki, BR-AG</td>
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<tr>
<td>14:00 – 14:45</td>
<td>Wrap up</td>
</tr>
<tr>
<td>15:00 – 16:00</td>
<td><strong>Campus Tour (Discover Daito Bunka University)</strong></td>
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</table>
Future of Technology Day

The participants are cordially invited for a half-day NTT site visit.

NTT DATA Corporation
Toyosu Center Building, 3-3, Toyosu 3-chome
Koto-ku, Tokyo 135-6033, Japan

NTT DATA, one of the ABMF international experts, will provide ASEAN+3 policymakers and infrastructure operators with a half-day program titled “Future Technology Day” on the morning of Friday, June 28.

The program will provide a unique opportunity for them to know cutting-edge information and communications technologies (ICT) that may have the potential for solving a wide range of economic and social problems in their respective countries.

NTT DATA is part of the NTT Group, a world-leading ICT conglomerates that originates from a government-owned company called Nippon Telegraph and Telephone Public Corporation (privatized in 1985). The company specializes in data processing and communications in the Group and provides ICT services ranging from consulting and system development to outsourcing business.

Participants will be invited to the premises of NTT DATA. Several presentations and demonstrations will be done based on the latest technologies, not only those already adopted in commercial products/services but also those still in their infancy.
### NTT DATA Corporation
### Site Visit Schedule
**Site Visit Schedule**
(Reserved to Registered Participants for 28 June Only)

<table>
<thead>
<tr>
<th>TIME</th>
<th>PROGRAM</th>
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<tbody>
<tr>
<td>08:45 - 09:00</td>
<td><strong>Roll call</strong></td>
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<td>❖ Transportation by bus will be provided from from two pick-up points:</td>
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<tr>
<td></td>
<td>(1) Hotel Metropolitan Ikebukuro</td>
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<td></td>
<td>(2) Sunshine City Prince Hotel</td>
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<td>❖ Bus assignment for participants staying at other hotels are as follows:</td>
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<tr>
<td></td>
<td>(1) Hotel Metropolitan Ikebukuro: APA Hotel Ikebukuro-Eki-Kitaguchi and</td>
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<td>Super Hotel LOHAS Ikebukuro-Eki Kitaguchi</td>
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<td></td>
<td>(2) Sunshine City Prince Hotel Bus: Centurion Hotel Ikebukuro</td>
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<td></td>
<td>Participants who did not provide their hotel name should proceed to Hotel</td>
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<td>Metropolitan Ikebukuro (1)</td>
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<td><strong>Note:</strong> Bus will leave the hotel at exactly 9:00AM</td>
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<td>09:00</td>
<td><strong>Exact Time of Departure</strong></td>
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<td>09:00 - 10:00</td>
<td><strong>Travel Time</strong></td>
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<tr>
<td>10:00 - 10:15</td>
<td><strong>Arrival</strong></td>
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<td>- Conducts procedures for entering the building and moving to the meeting</td>
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<tr>
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<td>room.</td>
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<tr>
<td>10:15 – 11:45</td>
<td><strong>Program</strong></td>
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<td></td>
<td>- Welcome speech and introductory video</td>
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<td>- The four groups enjoy the same presentations and demonstrations but</td>
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<td>in different order.</td>
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<td></td>
<td>- Examples of demonstrations (subject to change): High-resolution digital</td>
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<td>3D map, tactile technology for navigation, and virtual reality for</td>
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<td>working at dangerous high places.</td>
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<tr>
<td>11:45 – 12:00</td>
<td><strong>Wrap up</strong></td>
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<td>- Moving back to the building entrance.</td>
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<tr>
<td>12:00</td>
<td><strong>Depart for Ikebukuro</strong></td>
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<td>- The bus may stop by at several places to drop off participants (e.g.,</td>
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<td></td>
<td>Ginza and JR Tokyo Station).</td>
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Session 8: Regulatory risk mitigation and necessary consideration for more sound regional financial systems

SATORU YAMADERA
PRINCIPAL FINANCIAL SECTOR SPECIALIST

ASEAN+3 Bond Market Forum
Tokyo 24-28 June 2019
Recap of Day 1 discussion

• Possibility of market disruption
  • We do not know a potential impact of the benchmark reform

• Need to create further market awareness
  • Impact will not be limited to developed markets; it may impact on emerging markets.
  • Impact will not be limited to short-term rates; it may impact on long-term rates.

• Each financial market’s effort as well as regional effort
  • Given the interconnectedness of ASEAN+3 region, it may be necessary to consider a regional arrangement.

But do we have enough policy measures to manage the problems?
Increasing interdependence in regional banking

International claims on emerging Asia-Pacific, USD bn

Note: International claims are the sum of all cross-border claims and locally extended claims in foreign currency on an immediate borrower basis. Emerging Asia-Pacific is all economies in the Asia-Pacific region excluding Australia, Hong Kong SAR, Japan, New Zealand and Singapore. The sum of international claims on emerging Asia-Pacific held by Australian banks, Japanese banks, regional banks, Asian offshore banks and outside area banks (assuming these are headquartered in Asia).

Source: Remolona, E. & Sim, I. The rise of regional banking in Asia and the Pacific. BIS Quarterly Review, September 2015
USD continues to dominate in payments - It is not easy to find buyer/seller of LCYs

Can we increase use of LCY in cross-border?

LCYs are like commodities while USD is like a medium of exchange.

Can we shift to “barter” of LCYs?
LCY to LCY correspondent banking and its challenge

Bank A send an instruction to C to send 100 THB.

How can we make a large cross-border transfer within the same day?
- Asia’s LCY to LCY transfer might be possible, but sending USD from US accounts cannot take place in the same day.
- But, sending LCY in the same day may face a counter-party exposure limit.
- On-shore USD in Asia is limited.
- How can we facilitate intra-day liquidity?

Transfer from A to B at 1 THB = 0.13 MYR

A large transfer needs to be converted to USD due to limited liquidity in LCY direct dealing. Bank C needs to square the FX risk.

- Asia --> Asia T+0
- Asia --> US T+0 or T+1
- US --> Asia T+1

On-shore USD

Bank C inform Bank B of receiving 100 THB.
Conceptual understanding of cross-border collateral and repo business

- **Central Bank side**: ◆ Monetary Policy/ LLR

- **Market side**: ◆ Needs of funding, pledging, ensuring liquidity

**Country A**

- Central bank A

**Country B**

- Central bank B

- FI A

- FI B

- FI C

- Cross-border collateral scheme

 Repo for funding or reverse repo between FIs.

*FI= Financial institution
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<thead>
<tr>
<th>Current Layers of Global Financial Safety Net (GFSN)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Features</strong></td>
</tr>
<tr>
<td>IMF loan facilities</td>
</tr>
<tr>
<td>• Global insurance by a centralized party.</td>
</tr>
<tr>
<td>• Ex post crisis lending with conditionality negotiation is slow.</td>
</tr>
<tr>
<td>• Stigma associated with approaching the IMF.</td>
</tr>
<tr>
<td>CMIM as Regional Financing Arrangement (RFA)</td>
</tr>
<tr>
<td>• Multilateral insurance. Faster than IMF.</td>
</tr>
<tr>
<td>• deeper local knowledge to implement policies.</td>
</tr>
<tr>
<td>• Surveillance by AMRO.</td>
</tr>
<tr>
<td>• Support financing the government, not for a particular bank.</td>
</tr>
<tr>
<td>• USD plus local currency</td>
</tr>
<tr>
<td>Central bank swap</td>
</tr>
<tr>
<td>• Bilateral insurance. Relatively quick to avail.</td>
</tr>
<tr>
<td>• Effective during the GFC.</td>
</tr>
<tr>
<td>• Cost may not be significant, but subject to the liquidity-providing central bank’s mandate, not for financing the government.</td>
</tr>
<tr>
<td>• Not for supporting a particular bank but to prevent market-wide disruption.</td>
</tr>
<tr>
<td>• CB may need to take credit risk of supported banks.</td>
</tr>
<tr>
<td>FX reserves</td>
</tr>
<tr>
<td>• Unilateral insurance. Readily available.</td>
</tr>
<tr>
<td>• Support financing of the government, but can be used for domestic banks.</td>
</tr>
<tr>
<td>• Sharp decline of reserves may raise concern in the market.</td>
</tr>
<tr>
<td>• Cost of accumulating reserves may be high.</td>
</tr>
</tbody>
</table>
# Additional Layers of Regional Financial Safety Net (RFSN)

<table>
<thead>
<tr>
<th>Additional Layer</th>
<th>Features</th>
</tr>
</thead>
</table>
| IMF loan facilities | • Global insurance by a centralized party.  
• Ex post crisis lending with conditionality negotiation is slow.  
• Stigma associated with approaching the IMF. |
| CMIM as Regional Financing Arrangement (RFA) | • Multilateral insurance. Faster than IMF.  
• Deeper local knowledge to implement policies.  
• Surveillance by AMRO.  
• Support financing the government, not for a particular bank. |
| Central bank swap | • Bilateral insurance. Relatively quick to avail.  
• Effective during the GFC.  
• Cost may not be significant, but subject to the liquidity-providing central bank’s mandate, not for financing the government.  
• Not for supporting a particular bank but to prevent market-wide disruption.  
• CB may need to take credit risk of supported banks. |
| FX reserves | • Unilateral insurance. Readily available.  
• Support financing of the government, but can be used for domestic banks.  
• Sharp decline of reserves may raise concern in the market.  
• Cost of accumulating reserves may be high. |
| Cross-border collateral | • Self-help by banks. Readily available.  
• Eligibility of collateral to be expanded to foreign bonds by CBs.  
• Better to create the CSD-RTGS Linkages as ordinary liquidity facility.  
• A market-based arrangement and solution is possible with policy support |
Collateral mobilized via the ECB’ Correspondent Central Banking Model
Annual average of holdings, Billion Euro
CSD-RTGS Linkages

Country A

- Central Bank
- RTGS
- CSD
- GW
- Participant

Country B

- Central Bank
- RTGS
- CSD
- GW
- Participant

Country C

- Central Bank
- RTGS
- CSD
- GW
- Participant

Gateway

CSD-RTGS participating entities are connected through Gateway services, allowing cross-border transactions.
Evolution of ASEAN+3 Financial Cooperation to date

**Stronger economic linkage and synchronization of market**

**CMIM**

**AMRO**
- Global Financial Crisis
- Promoting development of domestic markets

**CMIM + ABMI**
- Bond market should function as another wheel
- Financial regulation overhaul
- Promoting more integrated financial market

**ABMJ**
- Developing markets to address the problem of double mismatch

**ABO**
- Asian Currency Crisis
- Linking the segmented markets for a more resilient regional market

**CGIF**
- Bond market functioned as a spare tire

**Currency Synchronization and Decoupling System (CSD-RTGS)**
- As a regional safety net

**Asian Bond Market Initiative (ABMI)**
- ADO
- CGIF
- AMBIF
- for inter-operable market
Thank you

syamadera@adb.org
visit https://asianbondsonline.adb.org

AsianBondsOnline is a one-stop source of information on bond markets in emerging East Asia

AsianBondsOnline
An ASEAN+3 Initiative

asianbonds_info@adb.org
asianbonds_feedback@adb.org
asianbondsonline.adb.org
Overview of Regional Safety Net

Nam Sung Kim, CMIM Specialist, AMRO

ABMF Meeting
Tokyo, 25 June 2019
Outlines

1. Background
2. Main Features of the CMIM
3. Recent Development and Way Forward
Outlines

1 Background
2 Main Features of the CMIM
3 Recent Development and Way Forward
Large foreign capital inflows carries risks of volatility

The region has benefited from large foreign capital inflows, mainly in the debt market...

...a large proportion of which is held by foreign non-banks, which is susceptible to reversal

Investor Base in ASEAN-4 Gov Debt (% Outstanding)

Note: Asian EMs refer to Korea, Malaysia, Thailand, Indonesia and the Philippines.
Source: Bloomberg, IMF and AMRO staff calculations
EMEs are prone to negative spillover

- Even in the absence of real economy linkages, the presence of common investors or lenders generates spillovers through portfolio rebalancing, fire sales, herding behavior or wake up calls. (IMF, 2016, Global Financial Stability Report (Chapter 2): The Growing Importance of Financial Spillovers from Emerging Market Economies; April 2016).
  - in 2008, cross-border flows of capital crashed to 4% of global output, a fifth of their peak the previous year.
  - Unconventional monetary policies by AEs had affected the rest of the world, particularly EMEs after GFC.

### Example of Shock Transmission through Common Lenders (2016, IMF)
Heavy reliance on USD: US trade share and USD invoice share

### Export to US share and USD invoice share

<table>
<thead>
<tr>
<th>US Export Share</th>
<th>USD Invoice Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>0%</td>
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<tr>
<td>10%</td>
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<td>90%</td>
<td>90%</td>
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<tr>
<td>100%</td>
<td>100%</td>
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</tbody>
</table>

### Import from US share and USD invoice share

<table>
<thead>
<tr>
<th>US Export Share</th>
<th>USD Invoice Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
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<tr>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Gopinath (2015), Casas, Diez, Gopinath and Gourinchas (2017)
Financial readiness for crisis: An overview

**Policy tools - traditional**
- Monetary policy (cutting rates ?)
- Fiscal tightening ?
- Allowing FX rate to appreciate ?
  - limited policy space available

**New policy tools – MPPs & CFMs**
: adding faucet and valves to inflows and outflows

**Domestic safety measure**
: Piling FX reserves

**Multilateral tools**

**Bilateral level: BSAs**
- Relatively quick to avail, effective during the GFC.
- Subject to the liquidity-providing CB’s mandate (not for fiscal financing).
- Not for supporting a particular bank but to prevent market-wide disruption.
- CB may need to take credit risk of supported banks.

**Regional level: RFAs**
- Financing mechanism backed by pooled resources through which regional countries pledge financial support.
- Quick disbursement facility, faster than IMF, deeper local knowledge.
- 10 RFAs globally and counting.

**Global level: IMF resources**
- Global insurance by a centralized party.
- Ex-post crisis lending with conditionality negotiation is slow.
- Stigma associated with approaching the IMF.
Global FSNs have expanded, in particular, in the aftermath of the GFC.

Evolution of the GFSN

Notes: For IMF and RFAs, size is gross total resources, including capital, quotas and borrowed resources. Latest data on reserves is at end 2016. Exchange rates taken at end year in period 2000-2016. Sources: IMF, RFAs Annual Reports and own calculations.

FX reserve holdings in the region have been on the rise

The self-insurance motivation* of EMEs with conditional or limited access to global financial market rose in the wake of AFC

* accumulating reserves as a signalling tool that may deter a sudden reversal of capital flow

Source: ECB, 2018 "Strengthening the Global Financial Safety Net"

Source: 2013 IMF Survey
### Benefit and cost of foreign reserves holding as a safety measure: a SWOT analysis

<table>
<thead>
<tr>
<th>Strength</th>
<th>Weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Readily available: highly liquid assets (USD, gold, SDR, etc.) convertible to foreign currency</td>
<td>• Higher holding costs than alternative measures, especially for EMEs</td>
</tr>
<tr>
<td>• At the disposal of national authority – not subject to external conditionality</td>
<td>• Negative externalities: may cause global imbalance with “savings glut”, Central bank sterilization bonds may crowd out investment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Threat</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The usefulness of reserves depends on country-specific factors such as openness and degree of foreign currency funding</td>
<td>• Reserves provide policy space to respond transitory shock for countries with sound fundamentals. However, when fundamental deteriorate, the space diminishes and the reserves does not, by itself, eliminate the risks</td>
</tr>
<tr>
<td>• Therefore, the IMF have developed country-specific metrics for appropriate level of reserve holdings (IMF ARA metrics)</td>
<td>• Certain policy environment limits FX rate intervention, which has been the major means to accumulate reserves</td>
</tr>
</tbody>
</table>
**IMF: a lender of last resort, with some caveats**

**IMF stigma is still a major problem**

- AFC experience was a major motivation for establishing CMIM and AMRO
- CMIM structure reflects competing interests among members
  - Potential recipients: fast liquidity support unencumbered by IMF scrutiny or conditionality
  - Potential lenders: assurance of repayment, for which, IMF co-financing may be utilized

**Historically, IMF facility alone has NOT been sufficient for bailouts.**

*Source: IMF, European Financial Stability Fund (EFSF), AMRO staff calculations*
Outlines

1. Background
2. Main Features of the CMIM
3. Recent Development and Way Forward
Progress of CMIM/AMRO so far

Development of the CMIM showcased ASEAN+3 members’ commitment to step up regional financial cooperation from bilateralism to a more structured multilateral cooperation.

CMI as a network of BSAs among ASEAN(5)+3 / IDLP 10%
ASA: USD 1bil ERPD

Phase 1 : CMI


Phase 2: CMIM upgrade & AMRO

CMIM: 16 BSAs ASEAN(5)+3 (USD39.5 bil) / IDLP 20%
ASA: USD 2bil ERPD merged w/ CMI

1975: Initial 1st MOU signed 1997: AFC

- 2011: 1st OCG endorsed
- 2013: 3 pillars for operational readiness started: peacetime checklist, OCG updates and test run
- 2016: Joint test run with IMF started
- 2017: BSAs, amounting to more than USD 160 billion, additional buffer to ASEAN+3

Upgraded CMIM
• USD240 bil
• CMIM-PL
• Longer maturity

CMIM upgrade agreed AMRO Ltd Created

CMIM: Single agreement among 10+3 (USD120 bil)

2010  2012  2014  2016  2019

Future Directions

AMRO 1st Periodic Review On CMIM
CMIM: Swap Transaction among ASEAN+3 with central decision-making

- CMIM → A multilateral liquidity support arrangement in the ASEAN+3 region

- Two Main Objectives
  - i. Self-help mechanism to address BOP and/or short-term liquidity difficulties (CMIM Prevention and Resolution Facilities)
  - ii. Supplement the existing international arrangement (IMF Linked portion)

- Financial Resources: Swap Lines/Transaction (a self-managed reserve pooling)

<table>
<thead>
<tr>
<th>Members</th>
<th>Contribution</th>
<th>Maximum Arrangement Amount (multiple)</th>
<th>Voting Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>China/Japan</td>
<td>76.80 bn. 32% each</td>
<td>38.4 bn. (50%) each</td>
<td>28.41% each</td>
</tr>
<tr>
<td>Korea</td>
<td>38.40 bn. 16%</td>
<td>38.4 bn. (100%)</td>
<td>14.77%</td>
</tr>
<tr>
<td>ASEAN</td>
<td>48 bn. 20%</td>
<td>250% or 500%</td>
<td>28.41%</td>
</tr>
<tr>
<td>Total</td>
<td>240 bn.</td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

- Collective Decision-making
  - i. Fundamental issues; by ASEAN+3 Finance Ministers and Central Bank Governors
  - ii. Executive issues; by ASEAN+3 Finance Deputies and Central Bank Deputies (via 2/3 of the voting powers)
CMIM: Swap Transaction Mechanism

1. ARP’s LCY is credited for quasi collateral for USD by multiple APPs

![Diagram of ARP's LCY and multiple APP accounts](image)

2. Thereafter, all APPs credit USD for ARP through FRB-NY.

![Diagram of FRB-NY and APP accounts](image)
RFA in the ASEAN+3 region: CMIM (USD 240 billion) serves two objectives:
(i) to address USD short-term liquidity difficulties and/or BOP difficulties; and
(ii) supplement the existing international arrangement.

<table>
<thead>
<tr>
<th>Stability Facility (CMIM-SF)</th>
<th>Precautionary Line (CMIM-PL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Currency Swap for <strong>actual</strong> short-term USD liquidity and/or BOP difficulties</td>
<td>• Swap Lines for <strong>potential</strong> short-term USD liquidity and/or BOP difficulties</td>
</tr>
<tr>
<td>• May attach ex-post conditionality (In case of IMF Linked Portion, consistency should be secured)</td>
<td>• May attach ex-post conditionality (In case of IMF Linked Portion, consistency should be secured)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IMF Linked Portion (100%)</th>
<th>IMF Linked Portion (100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corresponding IMF Program exists</td>
<td>Corresponding IMF Program exists</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IMF De-linked Portion (30%)</th>
<th>IMF De-linked Portion (30%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No corresponding IMF program</td>
<td>No corresponding IMF program</td>
</tr>
</tbody>
</table>

Ex-ante qualifications based on 5 criteria:
1) External position and market access
2) Fiscal policy
3) Monetary policy
4) Financial sector soundness and Supervision, and
5) Data adequacy
Main features of CMIM in comparison to other RFAs

**Objectives**
- **CMIM** – Support for Liquidity and BoP difficulties
  - AMF, FLAR – Liquidity and BoP difficulties + other mandates
  - EFSF, ESM – “Financial stability”

**Legal framework**
- **CMIM** – Contract-type agreement and no legal personality. AMRO’s support
  - AMF, FLAR, ESM et al – IO based on international treaty

**Funding and financing**
- **CMIM** – Multilateral Swap Arrangement governed by a single contract
  - AMF, FLAR, ESM et al – funding by paid-in capital, loan-type financing

**IMF involvement**
- **CMIM** – Co-financing with IMF is required for access of more than 30% of fund available
  - EFSM, EFSF, ESM – co-financing with IMF is either mandatory or strongly recommended by the treaties

  - AMF, FLAR, EFSD – No IMF linkages
Main features of CMIM in comparison to other RFAs (ii)

CMIM is the 3rd largest RFA in terms of absolute size and as a % of members’ IMF quota.

CMIM resource is almost double of members’ IMF quota.

MAAs for smaller members are multiple of their IMF quotas.

However, would not be sufficient for bigger members or region-wide crisis.

Source: The IMF, RFA websites and AMRO staff calculations.
ASEAN+3 Macroeconomic Research Office (AMRO)

**Purpose (Art.2)**

"Conducting regional **economic surveillance**"

"Supporting the implementation of the regional financial arrangement."

**Functions (Art.3)**

"(a) to monitor, assess and report to members on their macroeconomic status and financial soundness;
(b) to identify for members macroeconomic and financial risks and vulnerabilities in the region and assist them, if requested, in the timely formulation of **policy recommendations** to mitigate such risks;"

"(c) to support members in the implementation of the CMIM"

"(d) other activities determined by the Executive Committee. → **Technical Assistance**"

To contribute to securing the economic and financial stability of the region
Outlines

1. Background
2. Main Features of the CMIM
3. Recent Development and Way Forward
Enhancing the GFSN: stronger cooperation among the layers

“Recognizing the recent economic and financial developments in the region, we reaffirm our commitment to further strengthen the CMIM, the Regional Financing Arrangement (RFA), as an effective and timely self-help mechanism, and a strong and reliable layer in the Global Financial Safety Net.”
(ASEAN+3 Finance Ministers Central Bank Governors’ Meeting, Nadi, May 2019)

Regional level: continuous enhancement of the CMIM

Global level: series of reform to enhance IMF lending capacity and toolkits

Individual country level: reserves accumulation as the main buffer against potential shocks

Collaboration among layers of GFSN is call for because
• Safety net is uneven in scale and coverage
• The system as a whole lacks coordination

(G20 EPG report 2018)
Enhancement of the CMIM: a continuous effort

PERIODIC REVIEW OF CMIM AGREEMENT

1st CMIM Periodic Review concluded in May 2019
- Compatibility with IMF programs
- Legal basis for conditionality

REGULAR TEST RUN

Conducted regularly since 2013. Joint test runs with IMF have been annually conducted since 2016.

“CMIM FUTURE DIRECTION”

Medium to long term issues to enhance CMIM’s operational readiness while meeting evolving demands from members

REVISION OF OPERATIONAL GUIDELINES (OG)

Revisions from time to time based on CMIM members’ discussion and findings from the test run.

ENHANCEMENT OF AMRO’S SURVEILLANCE CAPACITY: PEACETIME AND CRISIS TIME
Thank you

ASEAN+3 Macroeconomic Research Office (AMRO)
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Tel: +65 6323 9875
Fax: +65 6323 9827
Email: namsung.kim@amro-asia.org
Website: www.amro-asia.org
Session 9: Technological trend and evolution

SATORU YAMADERA
PRINCIPAL FINANCIAL SECTOR SPECIALIST, ADB

ASEAN+3 Bond Market Forum
Tokyo 24-28 June 2019
Technologies to improve finance

• What is driving the changes in finance?
  • Changes in data environment
  • Thanks to rapid technological advancement, exponential growth of data can be managed with low cost.
  • All information can be digitized.
  • Once digitized, we can apply technological improvement.
    • Human to machine reading

• But, transactions go beyond border
  • There may be a mismatch in data element.
  • Ensuring inter-operability is the key.
    • Standardization and inter-operability

• What are the key enablers of the change?
  • From analog data to digital
  • Link between cyber space and real world

Global mobile traffic
Exa ($10^{18}$) Bites per Month

Source: Ericsson. Future mobile data usage and traffic growth
From Human to machine reading

- Human interface to machine interface
- Human brain to artificial intelligence

But, we need to feed data readily readable by machines

```
<food>
  <name>Beef steak</name>
  <price>1,000</price>
<food>
<food>
  <name>Apple</name>
  <quantity>300</quantity>
```

How to define data and information needs to be agreed and standardized. XML, HTML, XBRL
Heterogeneous Asia

Technology may be able to overcome differences
Standardization is important, but more importantly, ensuring inter-operability is the key for cross-border transactions.

Standards are “strategic tools that reduce costs by minimizing waste and errors and increasing productivity. The help companies to access new markets, level the playing field for developing countries and facilitate free and fair global trade.”

Source: ISO website

Though we may not be able to standardize everything, we can find a way to ensure interoperability.
From cyber space to real world

• Everything can be digital
• But, we need a link between virtual and actual.
  • Delivery service in e-commerce
  • ATM to cash digital value
Outline of the rest of the day and Day 3

- Homan to machine reading
- Standardization and inter-operability
- Link between virtual and real
  - Session 9: Technology to Improve Regulatory Reporting
  - Session 10: Account Structure Study and Standardization of KYC
  - Session 11: FinTech and RegTech
  - Session 12: Panel Discussion: How can technology improve the region’s regulatory environment and support market integration?

Day 3: Creating the Future: Suptech and Regtech powered by Standards and Structured data
  - Recent Trends in Automated Regulatory Reporting and Supervisory Information Collection
AsianBondsOnline is a one-stop source of information on bond markets in emerging East Asia.

Thank you

syamadera@adb.org

visit https://asianbondsonline.adb.org
Use of Artificial Intelligence, OCR and RPA

Hey! Robot! I’ll leave it to you!
NTT DATA Introduction
– Who we are
NTT Group at Glance

- $2B R&D Investment
- AA- S&P rating
- #50 in Fortune Global 500
- $105 billion in total revenue
- Top 100 Global Innovator in Clarivate Analytics
- 6,000 R&D Professionals
- 275,000 Employees Worldwide

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NTT DATA is Part of NTT Group

- Planning management strategies for NTT Group
- Encouraging fundamental R&D

- Planning global strategy
- Promoting global governance

NTT Communications Corporation (100%)
Dimension Data Holdings PLC (100%)

NTT Venture Capital, L.P. (100%)

Managed ICT / Data Center Network

Software (Application Layer)

NTT DATA CORPORATION (54.2%*) *Equity Ratio

B2B IT Services

NTT DATA is Part of NTT Group

NTT DOCOMO, INC. (66.7%)
NTT EAST (100%)
NTT WEST (100%)

NTT, Inc.
NIPPON TELEGRAPH AND TELEPHONE CORPORATION (Holding Company)

NTT DATA CORPORATION

NTT Ventura Capital, L.P. (100%)

NTT DOCOMO, INC. (66.7%)
NTT EAST (100%)
NTT WEST (100%)

Managed ICT / Data Center Network

Software (Application Layer)

NTT DATA CORPORATION (54.2%*) *Equity Ratio

B2B IT Services

NTT, Inc.
NIPPON TELEGRAPH AND TELEPHONE CORPORATION (Holding Company)
Who I am

Takuya Nakagawa

• Graduated from Department of Economics, Faculty of Economics, Tohoku University in 2001 and joined NTT DATA Corporation.

• Started my carrier as an engineer of a system to manage labor accident insurance and employment insurance of the Ministry of Health, Labor and Welfare in Japan.

• In 2009, Planned and developed OCR product "Prexifort-OCR" utilizing the technology of NTT laboratory, promoted automation of document entry work in public, financial, corporate and global fields.

• In 2014, in order to automate operation of inputting data other than of the document, I started to plan and sell RPA software "WinActor / OfficeRobot" and grew the business as big as more than 1,500 companies has introduced in 3 years.

• As of 2018, mainly acting writing and lecturing based on my experience, I also explains about RPA in the "JISA Information Service Industry White Paper 2017" and "Fully Understanding RPA (Nikkei BP publishing)", etc.

• For details of my activity, please visit https://winactor.com/.
Agenda

1. Automation by Software robot ”RPA”
2. Automation by Artificial intelligence
3. RPA are leading social changes
1. Automation by Software robot “RPA”
What is RPA (Robotic Process Automation)

• RPA (robotic process automation) is a mechanism to make efficient and automate white-collar work by utilizing rule engine, machine learning, artificial intelligence etc.

• Also called virtual intellectual worker (Digital Labor / Digital Worker).
Rapid growth of RPA market in Japan

NTT customers exceeded 3,000 companies
Rapid growth of RPA market in Japan
RPA DEMO (Used in an electric shop)

Customer → Accept Order → Call Center

Visit & Construct → Electronics shop

Worker → Make "Location Details" sheet
Use excel data to create Location details Word file

Demo movie
RPA’s productivity $\approx 9(3\times3)$ times
Non-routine work (Advanced task)

Routine Work (Simple task)

Information systems

Human

IT

RPA
Non-routine work (Advanced task)

Routine Work (Simple task)

Information system

Human

IT

RPA
What is RPA used for?

Cost

Operation cost is reduced
Benefits of introducing RPA

Cost

Operation cost is reduced

Quality

Improvement of operation quality by reduction of human errors
Benefits of introducing RPA

- **Cost**: Operation cost is reduced
- **Quality**: Improvement of operation quality by reduction of human errors
- **Fast**: Reduction of lead time
- **Tamper Prevention**: Enhance compliance response
Benefits of introducing RPA

- **Cost**: Operation cost is reduced
- **Quality**: Improvement of operation quality by reduction of human errors
- **Fast**: Reduction of lead time
- **Tamper Prevention**: Enhance compliance response
- **Stress reduction**: Release from confusing system operation and waiting time
2. Automation by Artificial Intelligence
“IPA” Intelligent Process Automation

- **Non-routine work (Advanced task)**

- **Routine Work (Simple task)**

- **Information system**
The AI-OCR eliminates the restriction on the medium (paper / electronic)
The AI-OCR eliminates the restriction on the medium (paper / electronic)

Character frames are needed
Let's see the demonstration of AI OCR
Bank of Japan’s Short-term Economic Observation Survey of Japanese Companies “TANKAN”

In order to accurately grasp corporate trends and make it the basis of monetary policy, bank of Japan conducts statistical survey “TANKAN” quarterly for approximately 10,000 domestic companies.
The survey is conducted on paper form in order to promote answer from companies.

<table>
<thead>
<tr>
<th>Financial Situation</th>
<th>Annual Financial Plan</th>
<th>Price Forecast</th>
</tr>
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<tbody>
<tr>
<td>Financial Situation</td>
<td>Annual Financial Plan</td>
<td>Price Forecast</td>
</tr>
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</table>
What is OCR??

OCR ( Optical Character Recognition ) is a technology that converts images of text into editable text. OCR technology is widely used in fields such as document management and data entry. It is often used to extract text from scanned documents, printed receipts, and other sources of paper-based information. The process typically involves scanning the document, processing the image to remove noise and improve quality, and then applying algorithms to recognize and transcribe the text into a digital format.
Restrictions on places and tools are eliminated by AI speakers

Hey! alexa!

“Reserve a meeting room”
“Make a bank transfer!”
“Call a taxi!”
Restrictions on places and tools are eliminated by AI speakers

Hey! alexa!

“Reserve a meeting room”
“Make a bank transfer!”
“Call a taxi!”

Automate all the actions behind AI speaker
Let's see the demonstration of AI speaker
Hand Sensor
Hand Sensor × RPA

One finger means calling taxi. Turning the hand means delivering e-mail.

Automate all the actions behind Sensor
Catalina's video processing technology
Demo of Catalina's video processing technology
Demo of AW3D
Global High-resolution 3D Map: “AW3D®”

AW3D is the world’s most precise pre-produced global digital 3D map covering all global land spaces with 5 meter resolution. This service offers a high-definition and high-resolution 3D map at 0.5 meter to 2 meter resolution. Thanks to its unrivalled accuracy, short delivery, and highly cost-effective feature, it has been used in many fields, including disaster mitigation, smart city, mining, telecom, and others, making it open up new possibilities in 3D map usability.

With one of world’s most advanced technology, 3D map is now more affordable to more people

Cutting edge algorithm x Big-data advanced processing

World’s first 5m global 3D map

Up to 0.5m data in some areas

Utilized in more than 100 countries/areas, 800 projects.

Applied in many fields, including telco and disaster mitigation.
The brain activity prediction and simulation technology : “NeuroAI”

The NTT DATA Group has launched “Neuro IT Business Lab” in partnership with NICT*. Under this Industry-Academia collaboration project, we engage in developing a neuroscience-based technology that predicts and simulates Human Brain activities, called NeuroAI. We provide the movie ads evaluation service using NeuroAI, for our customers to support their marketing activities.

Our NeuroAI technology will support you in exploring a new marketing approach as well as improving the effectiveness of marketing tool planning and production activities.
Mechanism of NeuroAI

MRI Measurement → Brain activity measurement → Decoding model

High cost & long timeline

Calmness
Speech
Blond hair
Emotion
Conspicuous
Wear
Superior

© 2018 NTT DATA Corporation
Demo of NeuroAI
3. RPA are leading social changes
Bank business expansion

Applicant didn’t gather...

How about using a robot?

Company president

Sales of a bank
RPA subsidy appearance

Local Government

RPA Subsidy

Increase productivity by RPA

Increase revenue

Companies

Tax revenue and population growth

RPA subsidy appearance
RPA was adopted in high school class
Session 10, 25th June, 2019
Account Structure Study and Standardization of KYC

NTT DATA SYSTEM TECHNOLOGIES Inc.
Shinya Kim,
Naotaka Shibasaki,
Daisuke Yachi
Outline

1. Objective of the study

2. Information to be collected for KYC

3. Country case studies: flows of KYC process for on-boarding and taxation
   • Indonesia
   • Philippines
   • People’s Republic of China
     • Bond Connect
     • Japan

4. Key findings from the case studies

5. Preliminary recommendation based on the interim study

6. Next step
Objective of the Study

- To promote cross-border bond transactions in ASEAN+3, identify account structures in ASEAN+3 markets.
  - Depending on the structure, flows of information to open an account may vary.
- Identify procedures for opening an account (onboarding),
  - necessary information to be collected for onboarding,
  - approval procedures if involved.
- Identify procedures and necessary information for taxation as a tax rate may vary depending on the status of investors such as resident and non-resident.
- Check whether the account structure would affect the procedures of onboarding and taxation.
- Propose standardization of the procedures of onboarding and taxation, where possible.
In KYC, it may be better to distinguish the two below:

1. **Onboarding:** Financial institutions must check a customer when establishing a business relationship.
   - Name of entity, nationality, legal status, etc.
   - Strict ALM/CTF investigation may be necessary.
     - Additional proof of existence
     - Clear identification of business, etc.

2. **Taxation:** As a tax agent, a custodian may need to collect information of customers to file tax procedures.
   - Information of tax status such as non-resident or resident.
   - Nationality to apply a tax rate agreed by a double tax treaty.
Case studies
1. Investor Type (individual or institutional)
2. Name
3. Nationality / Legal domicile
4. Identity Number (i.e. Tax ID and/or personal ID for individual)
5. Date of Birth / Date of company establishment
6. Address
7. Type of Business (only for institution), please choose from the below categories:
   a. Corporate (CP)
   b. Foundation (FD)
   c. Financial institution - bank (IB)
   d. Financial institution - non bank (IB)
   e. Insurance (IS)
   f. Mutual Fund (MF)
   g. Pension Fund (PF)
   h. Securities company (SC)
   i. Others (OT), i.e. government entity or international organization

✓ Starting March 2018, financial institution clients are required to disclose the business principles, whether Sharia-based or conventional, when opening securities accounts.

✓ Starting December 2018, clients are required to provide the reference documents when creating SID to KSEI participants (local brokers or custodian banks). The reference documents are the basis of the data / information required to open SID. These documents will be administered by KSEI participants, which will be submitted to KSEI if required.
KYC information for account opening (Indonesia)

Ex: Investment in Indonesia

Indonesia

- KSEI (PT Kustodian Sentral Efek Indonesia)
  - Local Custodian
    - Conduct KYC
    - KYC info
  - Reply SID

Overseas

- Global Custodian
  - Conduct KYC
  - SID
  - Foreign Investor
    - KYC info

In the case where foreign investors open their own accounts in the local custodian.

SID: Single Investor Identification

- Information for tax collection
- KYC information collected by global custodian
- KYC information collected by local custodian
- Application and reply for SID
KYC information for collecting tax (Indonesia)

Ex: Investment in Indonesia

DGT can be submitted by electrical form. However, this doesn’t bring investors so much advantage because the period for the submission is short.

In the case where foreign investors open their own accounts in the local custodian.
Information to be collected for KYC Philippines

No specific requirement set by CSD or regulators

Custodians will open custody accounts for their clients based on the respective banks' KYC documentary requirements.
KYC information for account opening (Philippines)

Ex: Investment in Philippines

- Local Custodian
- Bureau of Treasury
- PDTC
- KYC/AML Authority (Bangko Sentral ng Pilipinas [BSP])
- Overseas
- Global Custodian
- Foreign Investor

The account structure of CSD is omnibus. KYC information is not submitted to CSD.

Local custodian doesn’t conduct KYC process in this case.

BSP doesn’t conduct KYC process for each account opening. As an audit of local custodian, BSP confirms that local custodian conducts KYC process properly.

In the case where foreign investors’ accounts are included by the global custodian account.

In the case where foreign investors open their own accounts in the local custodian.

Information for account opening
Information for tax collection
KYC information collected by global custodian
KYC information collected by local custodian

(dotted line shows that the regulation exists but is not practical.)
KYC information for collecting tax (Philippines)

Ex: Investment in Philippines

- Information for account opening
- Information for tax collection
- KYC information collected by global custodian
- KYC information collected by local custodian

(dotted line shows that the regulation exists but is not practical.)

In the case where foreign investors’ accounts are included by the global custodian account.

In the case where foreign investors open their own accounts in the local custodian.
No specific requirement set by CSD or regulator.

Custodians will open custody accounts for their clients based on the respective banks' KYC documentary requirements.
KYC information for account opening (PRC)

Ex: Investment in China (QFII, CIBM direct)

- **Interbank Market**
  - Local Custodian
    - KYC info
  - Interbank Market
    - KYC/AML Authority (PBOC)
    - SHCH
    - CCDC
    - CFETS
  - Exchange Market
  - Local Custodian
    - KYC info
  - Exchange Market
    - KYC/AML Authority (CSRC)
    - CSDC

- **Overseas**
  - Global Custodian
    - KYC info
    - Foreign Investor (CIBM direct)
  - Global Custodian
    - KYC info
    - Foreign Investor (QFII)

- **Information for tax collection**
  - KYC information collected by global custodian

- **KYC information collected by local custodian**

- **Information for account opening**
KYC information for account opening (Bond Connect)

Ex: Investment in China (Bond Connect)

China

- The People's Bank of China [PBOC]
- SHCH
- CCDC

Hong Kong

- KYC/AML Authority (HKMA)
- Local Custodian (CMU member)
- BCCL

Overseas

- Global Custodian
- Foreign Investor

Information for account opening
Information for tax collection
KYC information collected by global custodian
KYC information collected by local custodian

BCCL helps foreign investors the registration to PBOC.
Information collected for KYC in Japan

No specific requirement set by CSD or regulator.

Custodians will open custody accounts for their clients based on the respective banks' KYC documentary requirements.
KYC information for account opening (Japan)

Ex: Investment in Japan

The account structure of CSD is omnibus. KYC information is not submitted to CSD.

Local custodian doesn’t conduct KYC process in this case.

Information for account opening
Information for tax collection
KYC information collected by global custodian
KYC information collected by local custodian

In the case where foreign investors’ accounts are included by the global custodian account.

In the case where foreign investors open their own accounts in the local custodian.
KYC information for collecting tax (Japan)

Ex: Investment in Japan

Local Custodian -> Info

Local Custodian -> Info

Local Custodian -> Info

In the case where foreign investors’ accounts are included by the global custodian account.

In the case where foreign investors open their own accounts in the local custodian.

Local custodian is supposed to manage the accounts separated by tax rates. At the moment, foreign investors aren’t required to pay tax for the interest, so local custodian separate accounts into domestic and foreign investors.

Information for account opening

Information for tax collection

KYC information collected by global custodian

KYC information collected by local custodian
Information collected for KYC in Thailand

No specific requirement set by CSD or regulator.

Custodians will open custody accounts for their clients based on the respective banks' KYC documentary requirements.
Information to be collected for KYC in Malaysia

(a) Beneficial owner name that corresponds to the LEI name
(b) LEI number
(c) Domicile
(d) Investor type (based on types prescribed by the Central Bank)

Above information is submitted online via PayNet (CSD) system
Information collected for KYC in Singapore

CDP account opening form

Nationality

Category code
- INDIVIDUAL
- JOINT
- STOCK BROKER.EXCLUDE SGX-ST MEMBER
- NOMINEES
- CORPORATE
- TRUSTEES...

Corporation code
- FULL LICENSED BANK
- MERCHANTABILITY/RETAIL/BANKING/ACCOUNTANT
- STATUTORY BOARD
- INSURANCE COMPANY
- FINANCE COMPANY
- UNIT TRUST/INVESTMENT TRUST
- PENSION FUND...

Residence code
- Malaysian
- Hong Kong, China
- Japan
- UK
- Europe
- US...
Key findings and preliminary recommendation
Key findings from the study

• In ASEAN+3, account structures are categorized in three ways:
  • omnibus account
  • segregated account
  • omnibus with single investors ID

• Financial institutions must check a customer when establishing a business relationship.
  • Required KYC information can differ from one institution to another.
  • There may be 1) local KYC requirements of the market receiving investments; 2) global custodian’s requirements; and 3) requirements of the market where investors are located.
  • What information can satisfy regulatory KYC may not easily be defined.

• As a withholding agent and tax agent, custodians need to collect information of customers to file tax procedures.

• Comparing to the onboarding KYC, information collected for taxation may be clearer but repetitive.
Recommendation: Standardization of KYC

- Based on the flows of information to fulfill the requirement of KYC, there are two types of KYC: initial KYC and transactional KYC.
Recommendation: Standardization of KYC data elements

**Basic data elements for taxation**

1. individual or non-individual (entity)
2. Name
3. Nationality / Legal domicile
4. Identity Number (i.e. Tax ID and/or personal ID for individual)
5. Date of Birth / Date of company establishment
6. Address
7. Type of Business (only for institution)
   a. Corporate (CP)
   b. Foundation (FD)
   c. Financial institution - bank (IB)
   d. Financial institution - non bank (IB)
   e. Insurance (IS)
   f. Mutual Fund (MF)
   g. Pension Fund (PF)
   h. Securities company (SC)
   i. Others (OT), i.e. government entity or international organization
Recommendation: Use of LEI for transactional KYC

**Basic data elements for taxation**
1. individual or non-individual (entity)
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3. Nationality / Legal domicile
4. Identity Number (i.e. Tax ID and/or personal ID for individual)
5. Date of Birth / Date of company establishment
6. Address
7. **Type of Business** (only for institution)
   a. Corporate (CP)
   b. Foundation (FD)
   c. Financial institution - bank (IB)
   d. Financial institution - non bank (IB)
   e. Insurance (IS)
   f. Mutual Fund (MF)
   g. Pension Fund (PF)
   h. Securities company (SC)
   i. Others (OT), i.e. government entity or international organization

LEI can provide the information in red. LEI can cover most of investors

**Entities with LEI**

**Entities without LEI**

**Individual investors**
What is LEI?

ISO 17442 Legal Entity Identifier

The term "legal entities" includes, but is not limited to, unique parties that are legally or financially responsible for the performance of financial transactions or have the legal right in their jurisdiction to enter independently into legal contracts, regardless of whether they are incorporated or constituted in some other way (e.g. trust, partnership, contractual). It excludes natural persons, but includes governmental organizations and supranationals.

4 digit LOU prefix + 00 + 12 characters of alphanumerical code plus 2 check digits

1354+00+WSQFAUVO9Q8Z+CD

- A LEI code does not contain embedded intelligence, but the information of the entity can be accessed from the Global LEI Foundation website.
- LEI is freely available.
- To acquire an LEI, an entity need to pay an annual fee (a few hundred USD), of which payment provides a proof of existence.
Next steps
Steps towards standardization

2019-2020

- Complete the study to identify the information flows of KYC procedures in the rest of the ASEAN+3 markets.
- Promotion of LEI to create more awareness among stakeholders such as financial institutions, financial regulators, and tax authorities in ASEAN+3.
- Discussion with MOFs and tax authorities
- Proposal of transactional KYC data elements template.

2021

- Development of ISO 20022 transactional KYC data model
- ISO 20022 business justification proposal
- Implementation of LEI where possible.
- Discussion to standardize initial KYC data elements

2022 -

- Implementation of transactional KYC template.
- Implementation of the new ISO 20022 message where possible.
- Proposal of initial KYC data elements template
The Global LEI System and LEI’s use cases

ASEAN+3 Bond Market Forum (ABMF)

Hiroshi Nakatake, GLEIF Board Director
Agenda

1. Global LEI System update
2. Expanding LEI use cases
3. LEI use cases in the context of Regtech
4. Appendix
   The role of digital ID in Risk Management
1. Global LEI System update
1.36 million active LEIs* exist in global LEI depository by the end of Q1-2019.

- 222 jurisdictions are covered by LEIs.
- The top 3 markets are the US, the UK, and Germany
- 70.8% overall renewal rate

LEI is required via different regulations in 13 jurisdictions.

*Active LEIs refer to LEIs with RegistrationStatus ISSUED, LAPSED, PENDING TRANSFER and PENDING ARCHIVAL.
The Legal Entity Identifier (LEI)

LEI is the linchpin that connects the dots across the universe of entity identification in the digital age

- 20-digit, alpha-numeric code based on the ISO 17442 standard developed by the ISO

- Connects to key reference information that enables clear and unique identification of legal entities participating in financial transactions
Information Available with the LEI: Data on ‘Who owns Whom’

Following information on ‘who is who’, the LEI data pool is enhanced to include information on ‘who owns whom’. This allows the identification of direct and ultimate parents of a legal entity and, vice versa, so that the entities owned by individual companies can be researched.
2. Expanding LEI use cases
Use of the LEI in payment messages to support sanction screening and due diligence (1 of 2)

- **SWIFT Payments Market Practice Group, the LEI in Payments Market**, November 2017:
  
  “the ability to clearly identify the originating and beneficiary parties with LEI (and therefore having additional transparency on these parties) could bring significant quantitative and qualitative benefits on a strategic basis, mainly for compliance and risk management functions”

- **Wolfsberg Group, Payment transparency principles**, October 2017:
  
  “wide adoption of LEIs might support more rapid elimination of false positive alerts generated by commonly deployed screening and monitoring systems for sanctions and AML purposes, while ensuring more efficient payment processing through the provision of certainty of identity.”
Use of the LEI in payment messages to support sanction screening and due diligence (2 of 2)

- **Supervisory Authorities/Law Enforcement**: Better compliance: Simplification of lists management
- **Financial Institutions**: Lower costs of compliance, risks reduction, higher STP
- **Clients**: Lower costs of compliance, Risk reduction, Less delays
Current and future adoption of LEI in cross-border payments

- Bank of England plans to make LEIs mandatory for transactions between financial institutions during the Enhancement Phase, provisionally around 2023. The Bank plans to extend the mandatory use of LEIs to a wider range of transactions depending on the wider adoption and use of LEIs.

- Reserve Bank of India published the “Payment and Settlement Systems in India: Vision – 2019-2021” in May 2019. Increasing LEI usage for large value cross border payments has been identified as one of the goals.

- European Central Bank requests LEI to be reported for euro money market statistical data collection in the EU since 15 March 2019.

- The use of LEI in payment messages might speed with the migration (provisionally around November 2021) of correspondent banking payment messages to ISO 20022. The LEI is in the process of being embedded in ISO 20022.
Potential use of LEI in Trade Finance
ADB Survey as a case study

- Asian Development Bank (ADB): “The power of the information linked to the LEI could be transformational...Without a unique and globally harmonized identifier, finding information about an SME in a sea of metadata would be difficult, if not impossible. The LEI makes this process workable and helps realize the potential of financial technology to make finance more accessible.”
- ADB conducted a survey for companies including SMEs in a range of small and large developing countries in Asia-Pacific.
- The survey result demonstrates that both large and small companies in large and small relatively easily and at reasonable cost.
- ADB concluded that global adoption of the LEI system would address two challenges: (i) access to finance and (ii) transparency in the economy.
Potential use of LEI for KYC and Anti-Money Laundering Requirements

According to a report released by the International Finance Corporation (IFC) of World Bank ‘Navigating Essential Anti-Money Laundering and Combating the Financing of Terrorism Requirements in Trade Finance: A Guide for Respondent Banks’, LEI is identified as one of the emerging innovations that can contribute to both the efficiency and effectiveness of a bank’s efforts at AML/CFT compliance.

The report states that one essential capacity the Correspondent Bank needed before adopting a KYC utility include: “National identification systems (to establish beneficial owner of a company, for example). For banks in countries that lack such a system, LEI may be an alternative.”

T20 Argentina Report on ‘A global framework for tracing Beneficial Ownership’ states: “In addition to bringing transparency on entities and their transactions, LEI is being recommended for conducting diligence on borrowers, on-boarding clients in securities and fixed-income markets, and for verifying buyers and sellers in a cross-border trade.”
3. LEI use cases in the context of Regtech
LEI and Regulatory Technology (RegTech)

- The objective of RegTech is to enhance transparency as well as consistency and to standardize regulatory processes, to deliver sound interpretations of ambiguous regulations and thus to provide higher levels of quality at lower cost.*

- LEI’s use cases in regulatory reporting and monitoring will open the door to further automation and digitization and make it easier and safer for businesses and citizens to participate in the digital marketplace.

LEI’s value in Regulatory Technology (RegTech)

- Simplification of data entry for multiple applications
- Minimization of regulatory reporting by linking LEI in payment transactions
- Aggregation of multiple Tax information and automation of Tax classification
- Automation of the scope of the change in regulations based on the attribute information in LEI
- Automation and timely reporting of the suspicious transactions
Use of LEI in regulatory space

**LEI coverage**

- Close to 100% coverage in OTC derivative trades*
- 101 rules published by FSB members referring to the LEI
- 49 rules mandate certain entities to have an LEI
- 12 FSB jurisdictions require renewal of LEIs for certain use cases
- Around 78% coverage of securities issuers in debt and equity securities*

*Source: Thematic Review on Implementation of the Legal Entity Identifier Peer Review Report*
What is unique to LEI

- Quality control embedded
- GLEIF monitors compliance with standards

No duplication, simple digital code

Across Countries, Authorities, Entities

- used across multiple countries, authorities, entities

'Mapped with IDs

- Mapped with other IDs like ISIN, BIC

'Who owns whom' structure

- Identification of direct and ultimate parents
Regulatory uses – FSB Thematic Review on Implementation of the Legal Entity Identifier*

1. Monitoring financial risks
   - Understand and identify the build-up of risk across multiple jurisdictions and across global financial processes
   - SWAP activity (CFTC)
     - Identifies the counterparties of majority of swaps reported to CFTC, permitting it to analyze the swap trading activity and exposure of entities

2. Exposure aggregation
   - Can facilitate the aggregation of data across all relevant entities
   - Borrower concentration (ECB)
     - Identify and monitor risks stemming from significant borrower concentrations
   - Link Centralised Securities Database (CSDB) with other micro database

* Source: Thematic Review on Implementation of the Legal Entity Identifier Peer Review Report
3. Statistical analysis
- IMF is exploring the use of LEI in its coordinated portfolio investment survey (CPIS) database to provide users with from-whom-to-whom CPIS positions by economy and sector of holder and issuer.

4. Understanding company structures
- Better understand multinational enterprise company structures and activities for statistical and supply chain assessment purposes.
- The Bank of Russia used LEIs to build the accounting structures of Russian holding companies and monitor the loans granted by Russian banks to entities at a group level.

*Source: Thematic Review on Implementation of the Legal Entity Identifier Peer Review Report*
5. Understanding market structures

- Interconnectedness among 900 clearing members identified with their LEI, as well as their liquidity providers and custodians (ESMA)

6. Support transparency for the benefit of investors

- Can augment the information provided to investors on securitized products and their underlying assets
- Use LEI to identify underlying reference entity for single name Credit Default SWAPs (CDSs) and to identify the issuers of the underlying bond for bond futures.

* Source: Thematic Review on Implementation of the Legal Entity Identifier Peer Review Report
LEI Use Cases in regulatory reporting and monitoring

- The LEI ROC* collected use cases of the public sector, among more central banks for regulatory reporting and monitoring, such as:
  - Identification of reporting entities (and their parents and foreign branches) to national regulators for supervision purposes
  - Identification of clients, counterparties or investments of reporting entities
  - Use of the LEI to support the identification of contracts or transactions (such as in the UTI)
  - Identification of entities for the supervision of credit rating agencies and for credit registries
  - The LEI for AML and CTF purposes in correspondent banking
  - The LEI for statistical purposes
  - The LEI as the identifier in payments markets: such as for payment systems of central banks (FED, ECB, BoE)

*See Progress report by the Legal Entity Identifier Regulatory Oversight Committee, 30 April 2018
Benefits of the LEI inclusion for the Asian Bond Market Initiative

- LEI is a unique global legal entity identifier that supports the Asian Bond Market Initiative.
- Inclusion of the LEI will improve the management of operational risks for all actors in the bond market.
- Inclusion of the LEI in the bond market will reduce time and resources spent on background checks and investigations.
- Inclusion of the LEI in the bond market will create a linchpin between the Asian market and other markets in the world, and connect different financial instruments through LEI mapping projects.
- Inclusion of the LEI in the bond market will facilitate easier and efficient reporting and monitoring, and enhance digitalization and compliance.
- Inclusion of the LEI in the bond transaction processes (inclusive payments) will contribute to foster more standardization of market practices and harmonization of regulations relating to cross-border transactions in the region.
Appendix 1

The role of digital ID in Risk Management and LEI as a digital ID
Needs for trusted digital identity

- The uptake of online communications and transactions requires trust and security. To create trust in online transactions, the first step is to be able to offer **reliable digital identities** in order to allow any party to know the identity of the counterparty.

- According to World Economic Forum (WEF):
  - ‘The implementation of digital identity networks would benefit a set of different stakeholder groups, especially to enhance data security for data users...GLEIF is an organization that supports the implementation of the Legal Entity Identifier standard – **this standard might ultimately become a common thread between identifier systems** in an effort to create a standardized global view of legal entities’. (Source: ‘A Blueprint for Digital Identity’)

  - ‘LEI has the potential to be leveraged in blockchain/distributed Digital Identity ledger applications as an identity label for trading financial instruments...Emerging technologies, such as blockchain and robotics, are already transforming operations and transactions between legal entities. **Legal entities will require digital identities to leverage these technologies to increase efficiency, productivity, cost-effectiveness and transparency**’. (Source: Digital Identity on the threshold of a Digital Identity Revolution)
Digital Identity – The New Challenge

- Lack of global interoperability: applications require mapping between real world entities and their digital ID.
- This is handled today via cryptographic algorithms creating public/private key pairs linked to reference data, often in the form of digital certificates.
- The owner of the private key is authorized for transactions within the application.
- Latest example: Blockchain and Distributed Ledger Technology

This raises two major concern:

1. Are we going to see multiple digital IDs depending on the application or are we going to use one ID to access all applications?
2. What is the appropriate management platform for all these IDs?
The LEI as part of a digital certificate would bind the identity to the actual individual or group of individuals.

Transactions signed with such a certificate could be unambiguously tracked back to the originator (in finance: counterparty identification, KYC, AML).

Validation and verification of individuals or groups need to be done anyway, but then only once, and not multiple times, as it is today. Use existing standards.

Blockchain / distributed ledger should consider these digital certificates and the underlying standards (X.509).
LEI embedded in Digital Certificates

- Leveraging an Object Identifier (OID) to place the LEI code in the digital certificate. GLEIF has registered the **OID 1.3.6.1.4.1.52266.1** for this purpose.
- **OID 1.3.6.1.4.1.52266.2** has been reserved for embedding “roles” in digital certificates. Example: Stephan Wolf, GLEIF, **CEO**

- Browser vendors could - based on such solution - display the LEI with a digital certificate. In addition, each LEI code allows to look up entity reference data provided in the Global LEI System. One way to achieve this would be leveraging the GLEIF LEI Look-up API for online look-up of LEI reference data.

[http://oid-info.com/get/1.3.6.1.4.1.52266.1](http://oid-info.com/get/1.3.6.1.4.1.52266.1)
LEI embedded in Digital Certificates
Current Status

- Certificate Authorities are beginning to offer SSL certificates including the owner’s LEI: https://www.trustcubes.com

- With this, LEIs are visible in Extended Validation (EV) certificates on websites:

- These certificates could also be used to sign emails and thus prove that the message is sent on behalf of the organization identified with the embedded LEI.
With the Annual Report 2018, GLEIF pioneers the inclusion of a Legal Entity Identifier (LEI) within digital financial documentation.

In partnership with XBRL International, GLEIF published its 2018 annual report in human and machine-readable Inline XBRL and HTML format, with GLEIF’s LEI embedded into the financial information for the first time.

It is the first official business report globally which automatically links the filing entity to its verified LEI reference data held within the Global LEI Index.

The process of embedding an organization’s LEI – or that of its affiliates, subsidiaries and parent companies – within digital financial reports, allows market participants who rely on official documents to inform strategic decisions (e.g. traders, investors, regulators) to quickly and easily consolidate and verify information on a filing entity.

The Annual Report 2018 was presented and demonstrated in inline XBRL format on 22 May 2019.
Limitations

This presentation contains confidential and proprietary information and/or trade secrets of the Global Legal Entity Identifier Foundation (GLEIF) and/or its affiliates, and is not to be published, reproduced, copied, or disclosed without the express written consent of Global Legal Entity Identifier Foundation.

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RegTech cases in Europe
Asian Bond Market Forum and XBRL Asia Roundtable

John Turner

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Around the world and particularly in Europe regulators are embracing the RegTech change and often driving it.
We may change the name of things, but their nature and their operation on the understanding never change.

David Hume, in An Enquiry Concerning Human Understanding, (1748), Chapter VIII: Of Liberty and Necessity, Part I
European financial ecosystem

Ecosystem = Stakeholders + Law + Technologies + ?
Why shall we be concerned about data?

Main factors contributing to compliance costs

- Too many requirements: 3.68
- Undeclared/vague requirements: 3.45
- Redundant requirements: 3.22
- Too many/too frequent amendments: 3.11
- Need to report under several diff. rep. frameworks: 2.94
- Lack of interoperability: 2.82
- Need to report too frequently: 2.82
- Overlapping requirements: 2.71
- Lack of technical guidance: 2.66
- Inconsistent requirements: 2.64
- Insufficient level of automation: 2.59
- Lack of a common financial language: 2.18
- Insufficient use of int. standards: 2.12
- Need to report to too many different entities: 2.03
- Insufficient use of ICT: 0.92

Source: Nathalie de Basaldua, European Commission, DG FISMA
### What do EU firms say?

#### Ways to simplify and streamline supervisory reporting

<table>
<thead>
<tr>
<th>Way</th>
<th>Short term (2 years or less)</th>
<th>Long term (more than 2 years)</th>
<th>Don't know / not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction of the number of data elements</td>
<td>68%</td>
<td>24%</td>
<td>8%</td>
</tr>
<tr>
<td>Clarification of the content of the data elements</td>
<td>57%</td>
<td>28%</td>
<td>15%</td>
</tr>
<tr>
<td>Greater alignment of reporting requirements</td>
<td>44%</td>
<td>42%</td>
<td>14%</td>
</tr>
<tr>
<td>Ensuring interoperability</td>
<td>27%</td>
<td>50%</td>
<td>23%</td>
</tr>
<tr>
<td>Greater standardisation/use of international standards</td>
<td>26%</td>
<td>47%</td>
<td>28%</td>
</tr>
<tr>
<td>Greater automation of the reporting process</td>
<td>21%</td>
<td>61%</td>
<td>18%</td>
</tr>
<tr>
<td>Development of a common financial language</td>
<td>18%</td>
<td>58%</td>
<td>24%</td>
</tr>
<tr>
<td>Greater use of ICT</td>
<td>10%</td>
<td>55%</td>
<td>34%</td>
</tr>
</tbody>
</table>

Source: Nathalie de Basaldua, European Commission, DG FISMA
Open standards and identifiers constitute foundation of many EU RegTech initiatives.
Data from XBRL filings is being made available online as a valuable resource to analysts, investors and citizens around the world:

- The UK's Companies House posts account data from over 1.5M firms. The data is updated on a daily basis in XBRL and iXBRL formats, and is available for free.

- The Spanish Colegio de Registradores collects and distributes information on over 800,000 firms, and provides detailed statistical information and credit reporting on SMEs.

- Citizens of Singapore can purchase information on over 60,000 firms from the Accounting and Corporate Regulatory Authority through the agency’s BizFile online portal.

- South Korea’s online DART system has over 58,000 XBRL entries from both private and public companies dating back to 2007, available to download in XLS format.

- Chile’s La Superintendencia de Valores y Seguros publishes quarterly IFRS-based financial statements from listed companies on its website.

- The Danish Erhvervsstyrelsen makes financial and other data from over 200,000 firms freely available online.

SOURCE: XBRL.ORG
RegTech is about people driving change but also requires agile, distributed, open technologies such as Open APIs.
EU Regulatory initiatives in the RegTech space
ESEF

- European Single Electronic Format

- Requires issuers listed on regulated markets to prepare their annual financial reports (AFR) in an ESEF from 1 January 2020

- Reports according to IFRSs should be sent to market and regulators (NCAs / OAMs)

- Format: ESMA decided for Inline XBRL
Financial Instruments Reference Database System

In accordance with Article 27 of Regulation (EU) No 600/2014 (MiFIR) [1] and Article 4 of Regulation (EU) No 596/2014 (MAR) [2], trading venues and systematic internalisers shall submit reference data for the relevant financial instruments to national competent authorities (NCAs) who will subsequently transmit it to ESMA for publication on its website.

ESMA collects data from trading venues and NCAs and makes it available on its website in accordance with MiFIR requirements.
SFTR

- Securities Financing Transactions

- SFTR responds to the need to enhance the transparency of securities financing markets and thus of the financial system

- SFTs are transactions such as repo, securities lending and margin lending

- ESMA produced a total of 7 draft technical standards under SFTR and delivered them on 30 March 2017

- EC endorsed the technical standards on 13 December 2018

- They were published in the OJ on 22 March 2019 and entered into force on 11 April 2019

- ESMA published CP on guidelines on reporting on 27 May 2019

- ISO 20022 / ISIN / UTI / LEI

Source: Nikolay Arnaudov, ESMA
RIAD

- RIAD hosts reference/master data 8+ million entities worldwide
- RIAD contains structural data about ~25,000 groups (~1,100 Banking Groups)
- ~ 1,100 Significant Institutions (as part of ECB-directly supervised banking groups)
  ~ 3,100 Less Significant Institutions
- RIAD provides ~7,600 “Close Link” relationships
- More than 1,100 users in the ESCB and SSM (already) have on-line access (~600 in the ECB)

Source: Peter Neudorfer, ECB
Financial Data Standardisation Project organised by DG FISMA

Vision: framework of Interoperable Standards enabling a) Efficient reporting of financial data b) Efficient monitoring of the financial system (banks, insurance companies, and financial markets) c) Allow better risk assessment by the supervision authorities d) Contribute to the safeguarding of the stability of the European Union’s financial system

Scope: standards (ISO20022, XBRL, SDMX), dictionaries (DPM, SMCube, SDMX-IM), messages, DRRs, data models, semantics, syntaxes

Stakeholders: EC, ESRB, ECB, the ESFS (EBA, EIOPA, ESMA) and the SRB as well as private Sector: commercial providers of financial data reporting standards and integrated IT solutions for financial data reporting

Initial phase: identification and harmonisation of data reporting requirements across FINREP, EMIR, BSI-MIR, MIFiD/MIFiR launched in Q3 2016
Ecosystem = Stakeholders + Law + Technology + Data

Finance*:

23/50+ EU regulatory frameworks | 28 national implementations | L1M, L2M, L3M | 28 EU Member States | Cross-border organisations | International regulators | ~3500 insurance firms | ~5700 banking institutions | ~8500 issuers | ~100000+ pension funds | ~25000+ pages of regulations | ~1500+ legal documents | ~3000+ reporting obligations | Data Point Models | ~11 data standards and formats | ~33 financial identifiers | Fintech | Regtech

* - initial findings of the Financial Data Standardisation Project by DG FISMA, Peter van den Hul
Problem example: 10 ways in which legal acts describe annual frequency of reporting

Other challenges:
• Comparability of financial offers across Member States (for businesses and citizens)
• Financial regulatory arbitrage (by financial and Fintech organisations)
• Differences in legal responsibility of counterparties and impact on EU financial stability*
• Proportionality principle across regulatory frameworks
• Variations in definitions and translation
* - research project by dr. Katarzyna B. Wojtkiewicz: “Impact of entity definition and identification on stability and regulation in a digitalised financial market – European perspective”
AUREP

- A shared infrastructure for submission of data by banks
- Central bank (OENB) has ongoing access to granular data and is able to build views
- Cost-efficiency, change management
- Similar consideration now by ABBL in Luxembourg
MAS Open Taxonomy

- Collaborative initiative with 32 top-tier banks led by industry experts established to understand regulatory data requirements for MAS 610/1003 reporting

- Started in 2018, MOT created in 6 months, 300,000 data points represented by 67 dimensions and 65 measures

- Output: a technologically-neutral DPM dictionary that banks can use to improve sourcing / lineage / quality of data

- Selected banks commenced projects to integrate MOT in their systems
UK Banks Working Group

- Collaborative initiative with 8 top-tier banks based on Singaporean example

- WG to standardise understanding of data based on Bank of England / PRA Data Point Model (DPM) dictionaries

- Current focus: derivatives

- Output: a technologically-neutral dictionary that banks can use to improve sourcing / lineage / quality of data

- Various technologies: ISO 20022 / XBRL / JSON / API / SQL / CSV
Thank you
Want to learn more?

www.iasb.org | www.xbrl.org | www.iso20022.org

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Regulatory use of Legal Entity Identifiers (LEIs) is driven by the authorities in local jurisdictions. The below table shows the current legislation status where LEIs are required.

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Master/Base Regulation</th>
<th>LEI required</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>CEA (Commodity Exchange Act)</td>
<td>Yes</td>
</tr>
<tr>
<td>US</td>
<td>Securities Exchange Act</td>
<td>Yes</td>
</tr>
<tr>
<td>EU</td>
<td>EMIR</td>
<td>Yes</td>
</tr>
<tr>
<td>EU</td>
<td>MiFID II/MiFIR</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Derivatives Act</td>
<td>Yes</td>
</tr>
<tr>
<td>IND</td>
<td>RBI 1934</td>
<td>Yes</td>
</tr>
<tr>
<td>Singapore</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>OTC derivatives regulatory regime</td>
<td>Yes</td>
</tr>
<tr>
<td>Australia</td>
<td>Corporations Act</td>
<td>Yes</td>
</tr>
<tr>
<td>JPN</td>
<td>Financial Instruments and Exchange Act</td>
<td>Requested</td>
</tr>
<tr>
<td>Global</td>
<td>Committee on Payments and Market Infrastructures</td>
<td>Recommended</td>
</tr>
</tbody>
</table>
RegTech in APAC and Standards

What can we do more for future?

Mieko Morioka, SWIFT Standards APAC
25 June, 2019
What happens when ISO 20022 messages are adopted?

• **Change in the messaging syntax:**
  • Proprietary to xml (JSON if API is used)

• **Use of ISO data standards:**
  • ISIN, BIC, Country Code, Currency Code
  • LEI has been introduced in the securities settlement and reconciliation messages. CA and payments messages also provide LEI as from 2018/2019 maintenance release versions

• **Structured and enriched data:**
  • Name and address (payments and securities)
  • Date and Time format (payments and securities)
  • Remittance information, regulatory reporting, purpose of payment (payments)
What Asia needs to do more?

- Acceleration of ISO 20022 adoption in the region
  ⇒ Not all markets has adopted ISO 20022 yet

- Regional harmonisation (use data standards and ISO 20022 version maintenance)
  ⇒ Important for the efficiency of the bilateral / multi-lateral regional initiatives

- Alignment with the standard and the global market practice
  ⇒ Basis of the regional harmonisation and internationalisation
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Brief Updates on
ASEAN+3 Bond Market Guides
AMBIT Implementation Guidelines

ADB Secretariat

31st ABMF Meeting, Daito Bunka University, Tokyo, Japan
24-25 June 2019
Points to Cover

- Status of ASEAN+3 Bond Market Guides
- Publishing Shortly: China Exchange Bond Market Guide
- Next Steps for Bond Market Guides
- Next Steps for AMBIF Implementation Guidelines
Status of ASEAN+3 Bond Market Guides (as of 24 June 2019)

https://asianbondsonline.adb.org/abmg.php
Publishing Shortly: China Exchange Bond Market Guide

187 pages
(at begin of editing process)
Next Steps for ASEAN+3 Bond Market Guides (BMG)

• Finalise China Inter-Bank Bond Market BMG, by end 2019

• Reviewing, revising of Thailand BMG, planned by end Sep 2019
• Reviewing, revising of Philippines BMG, by end 2019
• Reviewing, revising of Hong Kong BMG, by end 2019

• Discussions on updates to other BMGs, including for Japan in 2020
• Two-way synchronization with AMBIF Implementation Guidelines

• Integration with AsianBondsOnline
Next Steps for AMBIF Implementation Guidelines

• Finalise Cambodia by end 2019, based on new Prakas, developments
• Updating Philippines for recent developments, issuance(s), by 3Q2019
• Updating Thailand in line with BMG revisions, by end 2019
• Review, potential updating of Singapore following AMBIF issuance
• Continuing discussions with China Exchange Bond Market stakeholders
• Continuing discussions with Indonesia stakeholders
• Continuing discussions with Korea stakeholders